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CLAIMS

What is claimed is:

1. A radio frequency RF receiver having an RF front end followed by a base band section, said base band section comprising an automatic gain control AGC block that comprises a DC blocking capacitor coupled in series between an input node of said AGC block and an input to a gain element, said base band section further comprising a switch for selectively shorting around said DC blocking capacitor.
2. A receiver as in claim 1, wherein said switch is closed by a mobile station control unit when tuning to another RF channel to make a signal strength measurement.
3. A receiver as in claim 1, wherein said switch is closed by a mobile station control unit when resetting said capacitor to a known state.
4. A receiver as in claim 1, wherein said gain element is comprised of an operational amplifier connected in an inverting configuration.
5. A receiver as in claim 1, wherein said gain element is comprised of an operational amplifier connected in a non-inverting configuration.
6. A receiver as in claim 1, wherein said RF front end comprises a direct conversion receiver.
7. A radio frequency RF receiver having an RF front end followed by a base band section, said base band section comprising an automatic gain control AGC block that comprises an AC coupling capacitance coupled in series with a first resistance between an input node of said AGC block and an input to a gain element, said AC coupling capacitance and first resistance comprising a first order low pass filter for attenuating the AC value of an input signal appearing across said AC coupling capacitance; said base band section further comprising at least one switch and a capacitance for selectively transforming, when said at least one switch is closed, said first order low pass filter to

a second order low pass filter for increasing the attenuation of the AC value of the input signal.

8. A receiver as in claim 7, wherein said at least one switch is closed by a mobile station control unit.

9. A receiver as in claim 7, wherein said gain element is comprised of an operational amplifier connected in an inverting configuration, wherein said AC coupling capacitance is coupled between an inverting terminal of said operational amplifier and said first resistance, and wherein a second resistance is coupled between a non-inverting input of said operational amplifier and a reference voltage, and said at least one switch and said second capacitance are coupled in series between said input node and said non-inverting terminal of said operational amplifier.

10. A receiver as in claim 7, wherein said gain element is comprised of an operational amplifier connected in a non-inverting configuration, wherein said AC coupling capacitance is coupled between a non-inverting terminal of said operational amplifier and said first resistance, wherein a second resistance is coupled between an inverting input of said operational amplifier and a reference voltage, where said at least one switch comprises a first switch, where said first switch and said second capacitance are coupled in series between said input node and said inverting terminal of said operational amplifier, further comprising a second switch and a third resistance coupled in series between said inverting terminal of said operational amplifier and an output terminal of said operational amplifier, and further comprising a second gain element coupled between said output terminal of said operation amplifier and said non-inverting input node of said operational amplifier through a third switch.

11. A receiver as claim 10, wherein said second gain element is comprised of a second operational amplifier connected in an inverting configuration with an inverting input coupled to said output terminal of said operational amplifier, an non-inverting terminal coupled to said reference voltage, and an output terminal coupled through said third switch to said non-inverting terminal of said operational amplifier.

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12. A receiver as in claim 7, wherein said RF front end comprises a direct conversion receiver.

13. A method for operating a mobile station that comprises a radio frequency RF receiver having an RF front end followed by a base band section, said base band section comprising an automatic gain control AGC block that comprises a DC blocking capacitor coupled in series between an input node of said AGC block and an input to a gain element, comprising:

tuning from a current RF channel to another RF channel to make a signal strength measurement; and

reducing a time constant of said AGC circuit by shorting around said DC blocking capacitor.

14. A method for operating a mobile station that comprises a radio frequency RF receiver having an RF front end followed by a base band section, said base band section comprising an automatic gain control AGC block that comprises an AC coupling capacitance coupled in series with a first resistance between an input node of said AGC block and an input to a gain element, comprising:

operating said AC coupling capacitance and said first resistance as a first order low pass filter for attenuating the AC value of an input signal; and

closing at least one switch for switching in additional capacitance and resistance for transforming said first order low pass filter to a second order low pass filter for increasing the attenuation of the AC value of the input signal.

15. A mobile station that includes a radio frequency RF receiver having an RF front end with an output coupled to an input of a base band section, said base band section comprising an automatic gain control AGC block that comprises a capacitance coupled between an input node of said AGC block and an input to a gain element, said AGC block comprising a plurality of switches controlled by a control unit of said mobile

station for operating said AGC block in an all-pass signal reception mode of operation, or in a first DC compensation mode of operation, where a signal appearing across said capacitance is low pass filtered with a first order filter, or in a second DC compensation mode of operation, where a signal appearing across said capacitance is low pass filtered with a second order filter.

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